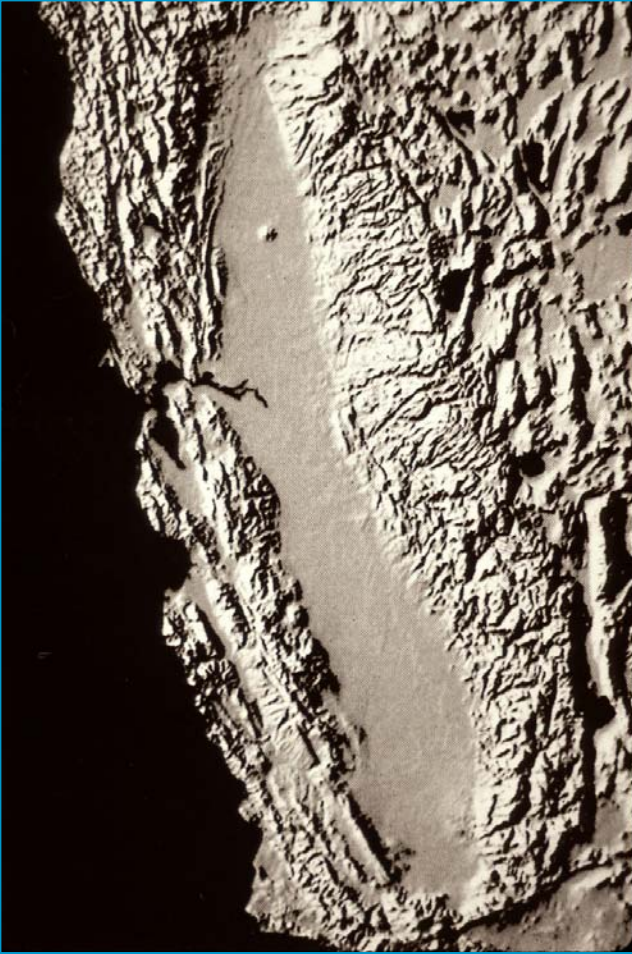


# Bond Funding: Flood & Delta

*Assembly Committee on  
Water, Parks & Wildlife*

# Battling the Inland Sea





# Hydraulic Mining > Sediment

(Banned 1884)



# Inland Sea Driven Into Narrow Channels

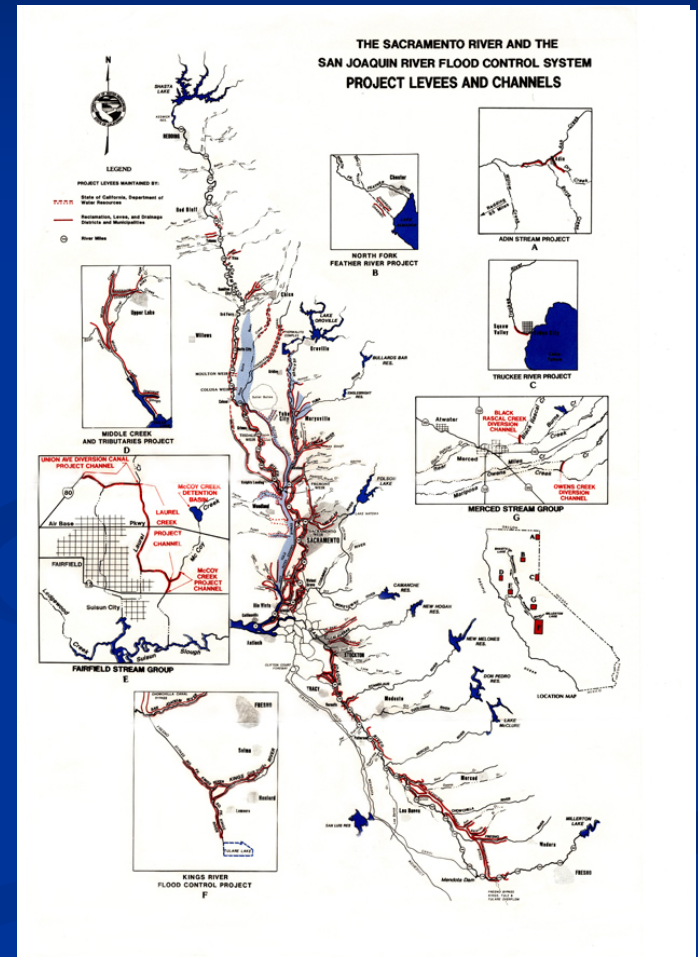


... to protect farm land



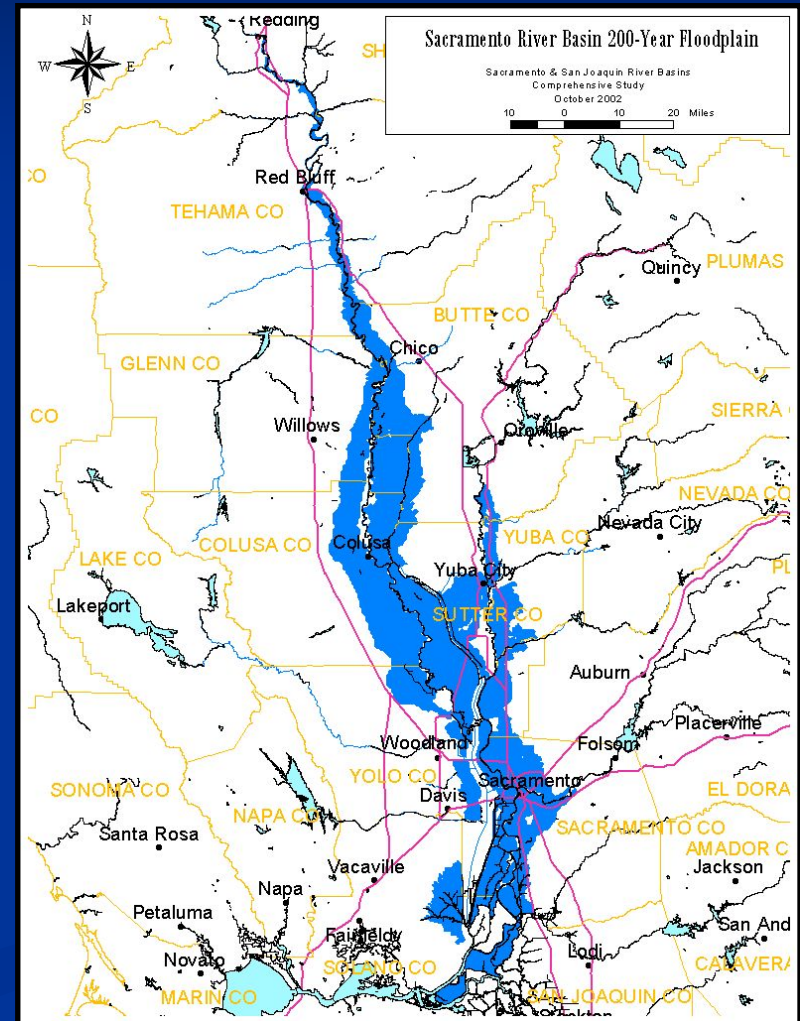
# California's Federal Flood System – Central Valley

- 1880: State Engineer Plan
- 1893: CA Debris Commission
- 1911: State Adoption
- 1917: Federal Authorization
- Today: 1600 Miles of Levees

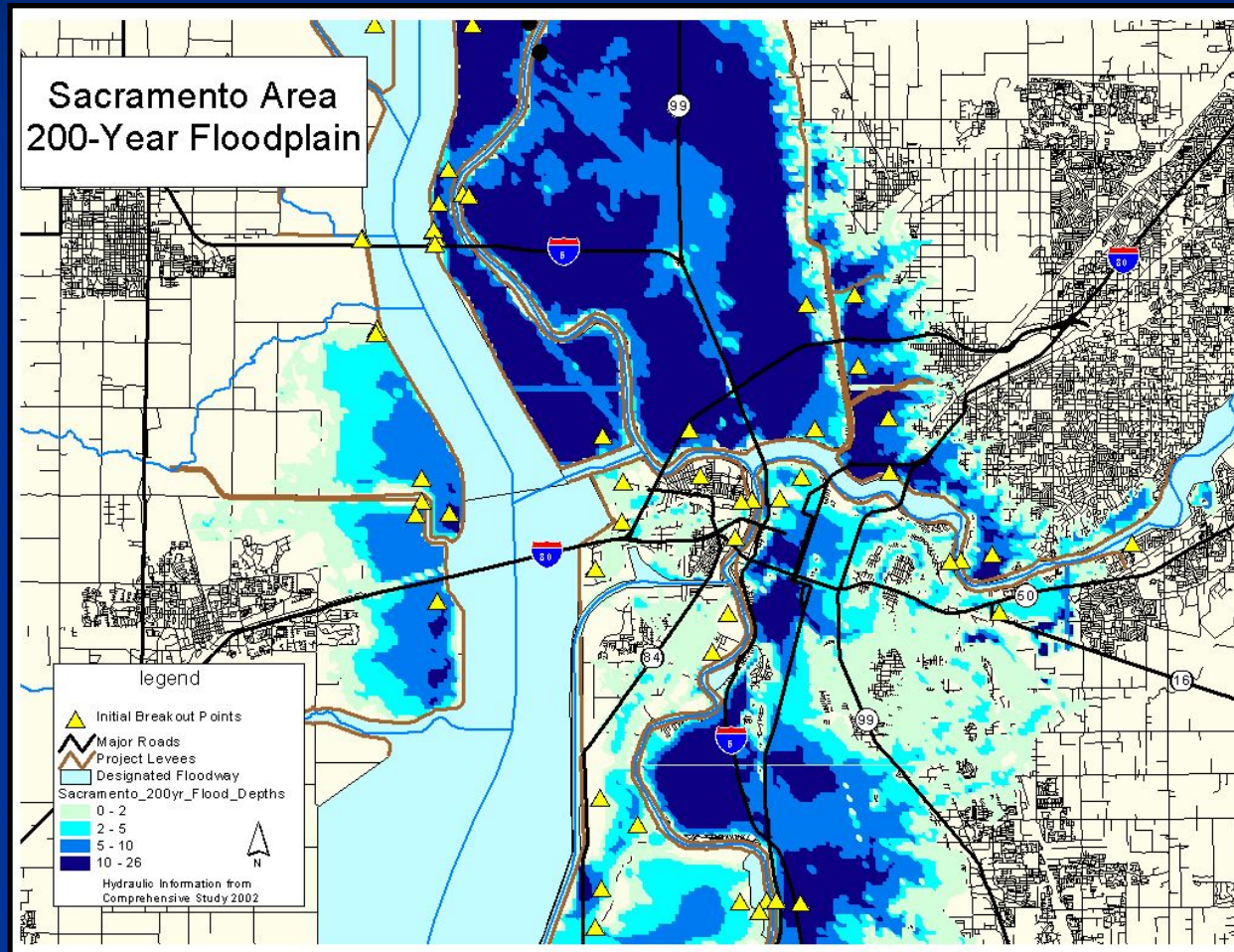


# Deep Floodplains

- 3+ Feet Deep
- May Fill Quickly
- Life At Risk



# Sacramento At Risk





# Development In Flood Plains

1980's



Today



Yuba/Sutter – Sacramento Valley



# New Orleans Flooding – 2005



# California Flooding – 1997



# State Flood Bond Funds

Flood Funding Category	Prop 1E	Prop 84
Evaluation, Repair & Improvement of Flood Facilities (Prop 1E includes Delta)	\$3,000	\$275
Flood Control Subventions Program	\$500	\$180
Floodway Corridor Program (Prop 1E includes floodplain mapping)	\$290	\$40
Stormwater Flood Management	\$300	\$90
Delta Flood Control – Specific Allocation	n/a	\$275
Floodplain Mapping – Specific Allocation	n/a	\$30
<b>TOTAL</b>	<b>\$4,090</b>	<b>\$890</b>

*(in millions of dollars)*



# Flood Bond Funding Priorities

- Emergency Levee Repairs & Channel Clearing
- Early Implementation Projects
  - rehabilitation, reconstruction, replacement
  - improvements for urban areas
- Evaluation, Assessment & Mapping
- Support for Local/Regional Efforts
- State Plan of Flood Control/Flood Protection
- Expansion of Flood Capacity – Floodway Corridor
- Environmental Mitigation
- Delta Levees

# Integral Policy Issues

- Floodplain Land Use/Development
- State Plan of Flood Control & Mapping
- Emergency Response Preparedness
- Federal/State/Local Responsibilities
- Who: DWR or Reclamation Board
- Liability for Failed Levees (*Paterno v. State*)
- Flood Insurance (Nat'l Flood Ins. Program)
- Project Levees vs. Flood Subvention Program

# Importance of the Delta

- 2/3 of California (22 million residents) rely on Delta water

## Urban Needs





# Importance of the Delta

- **Supplies Bay Area, Central Valley & So. California**

**Bay Area – 33%**

**Kern County – 23%**

**Southern California – 30%**

**Some regions up to 100%  
dependent on the Delta**



# Importance of the Delta

- Irrigates 45% of the fruits & vegetables produced in US





# Importance of the Delta

- 80% of the state's commercial fishery species live in or migrate through the Bay-Delta
- Habitat for 500 species, including 5 ESA listed species

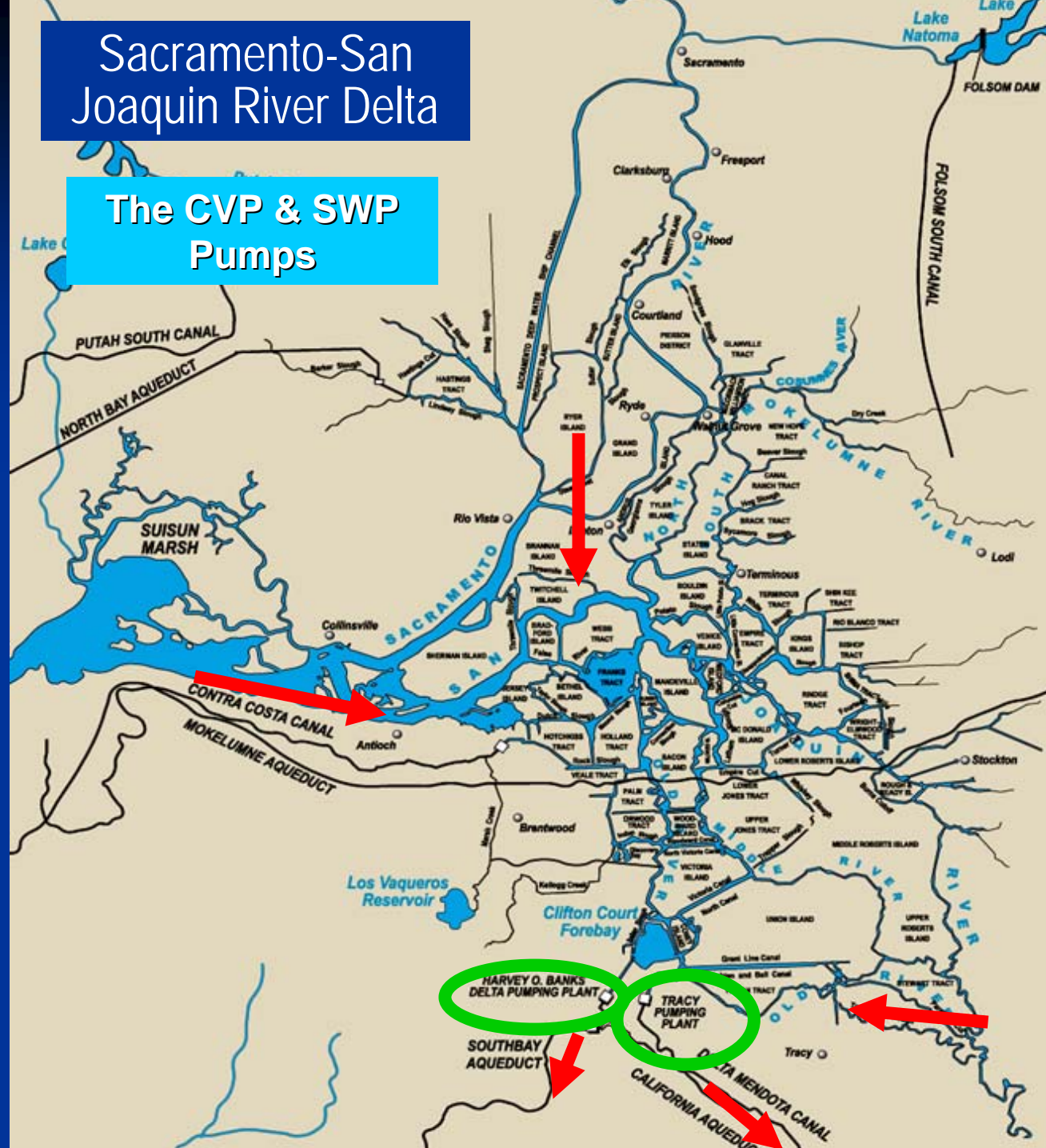


© www.tobinphoto.com



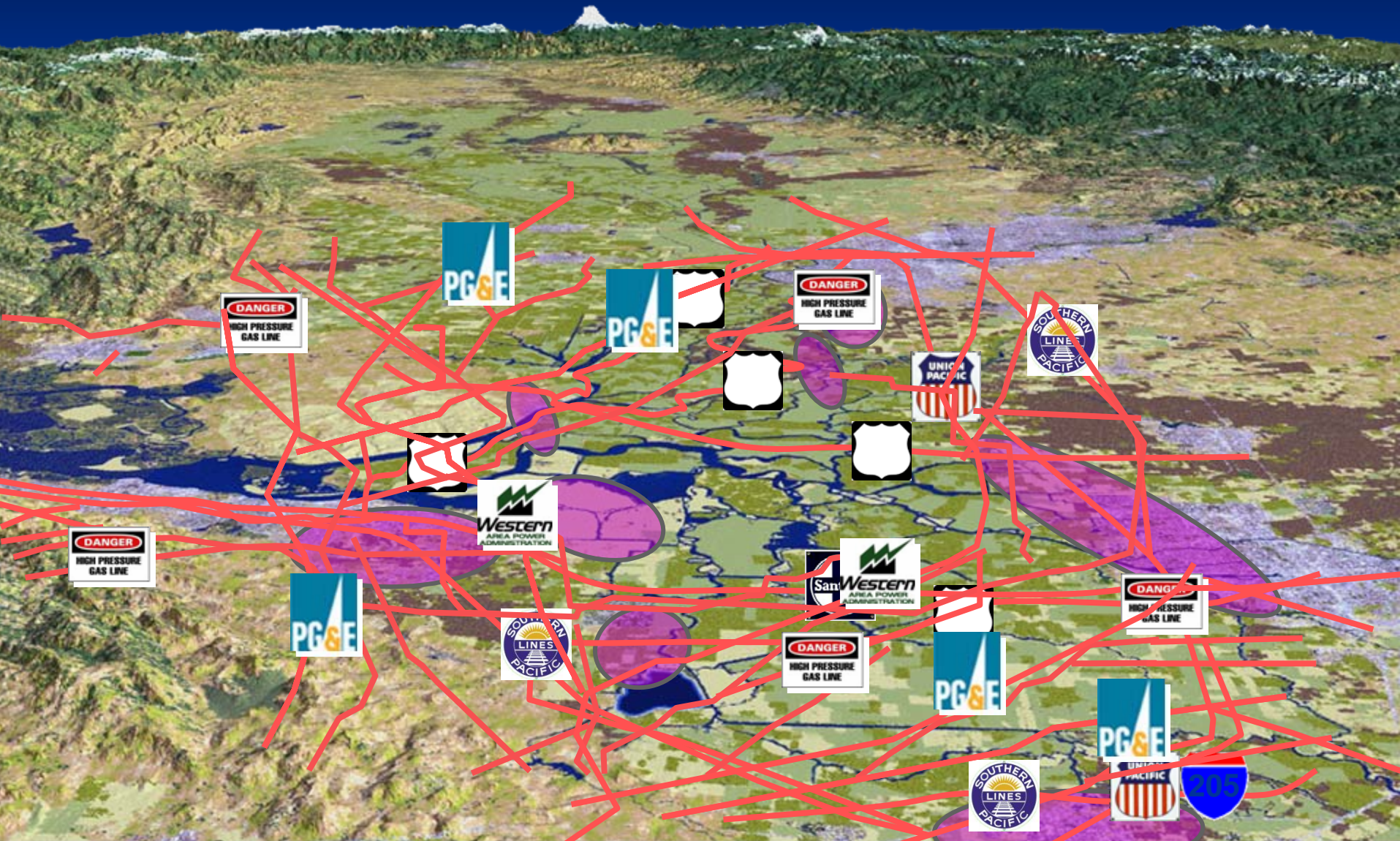
# Sacramento-San Joaquin River Delta

## The CVP & SWP Pumps





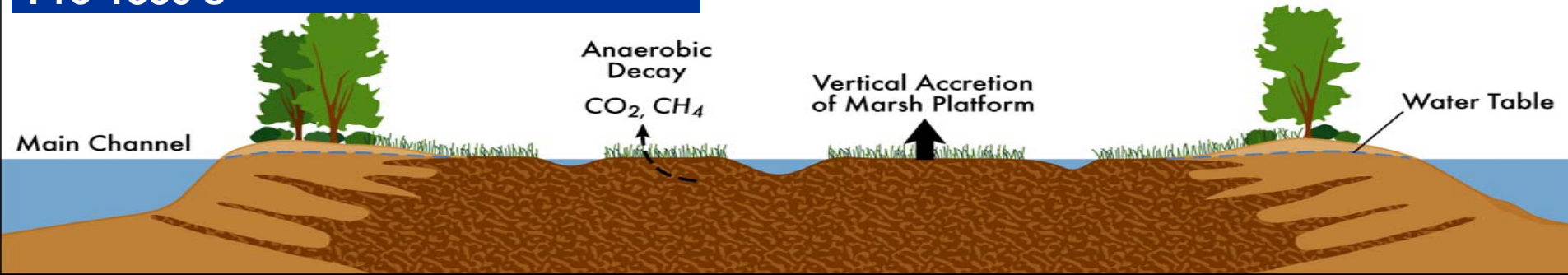
# Delta Infrastructure = More Than Water



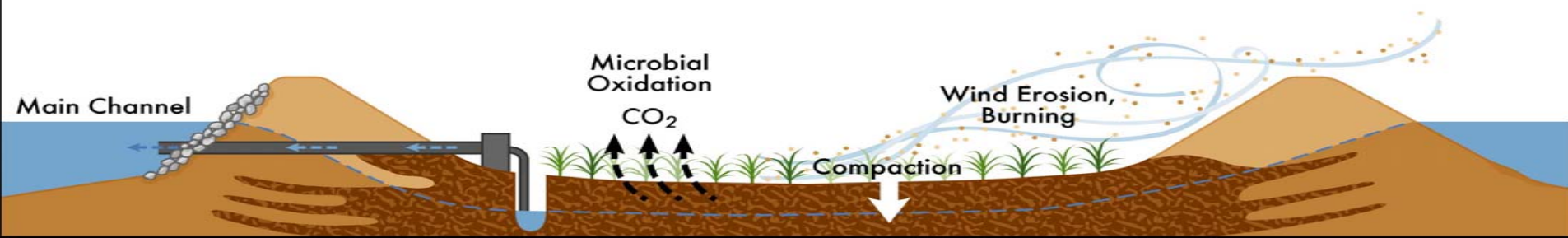


# Land Subsidence -- Islands or Holes?

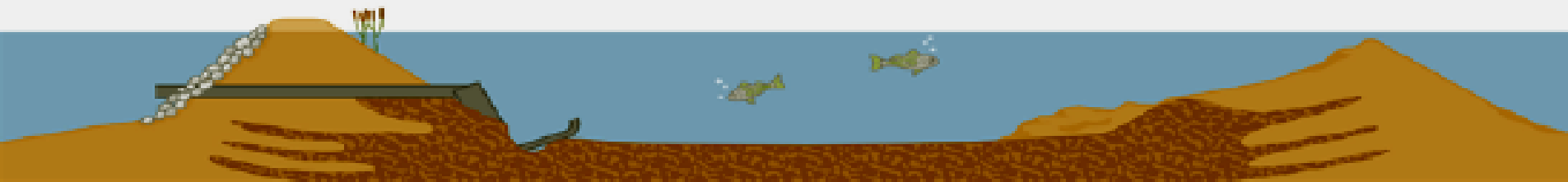
Pre-1880's



Present Time



Levee Failure



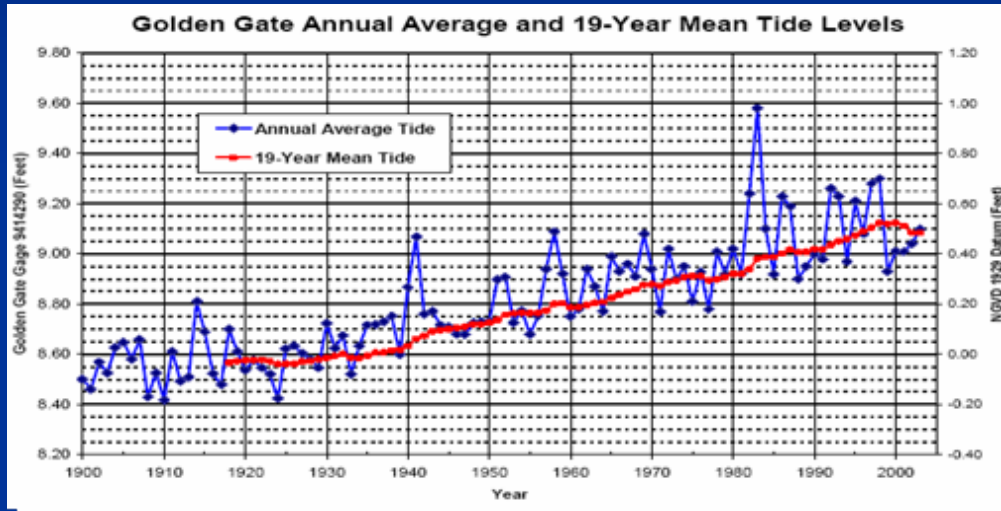


# Island Land Subsidence

- ~ 1.5 ft. per decade
- 30+ feet in some areas

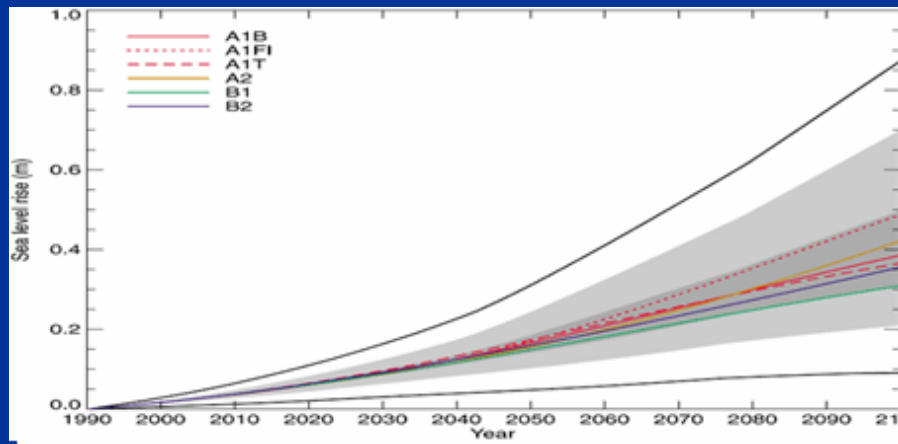


# Sea Level Rise



**Past (1900 – 2000)**

+ ½ ft sea level rise



**Future (2000 – 2100)**

½ to 3 ft sea level rise



# Historic Flood & Levee Failures

An aerial photograph of a river delta, likely the Mississippi River Delta, showing a complex network of waterways and land. The land is color-coded to represent different levels of flood risk or land use, with green and yellow areas indicating lower risk and purple and brown areas indicating higher risk. The river flows from the top center towards the bottom, branching out into a dense network of distributaries.

- 162 levee failures in last 100 years
- 64% chance of major earthquake or flood by 2032



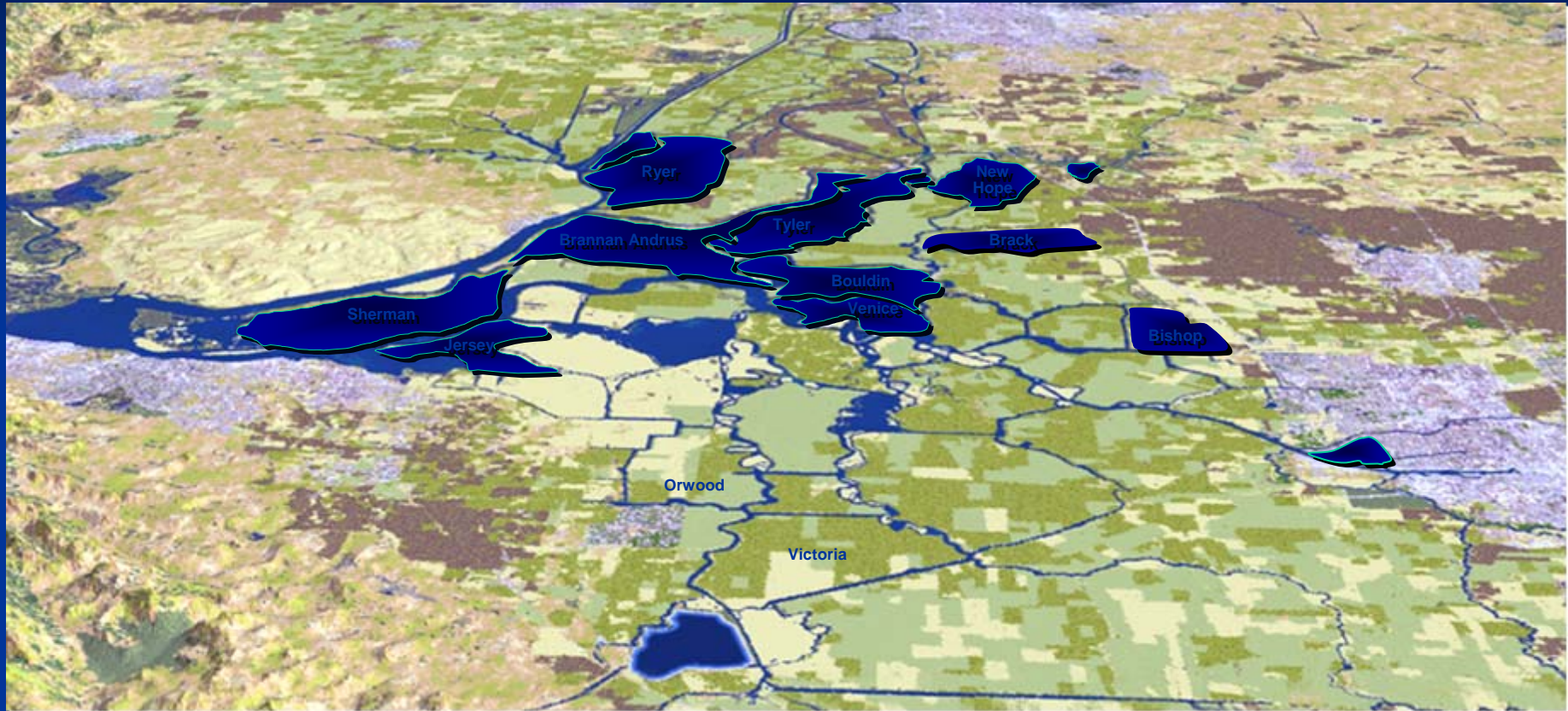
# Jones Tract (2004)

\$45 Million State Funding  
For Repairs & Pumping





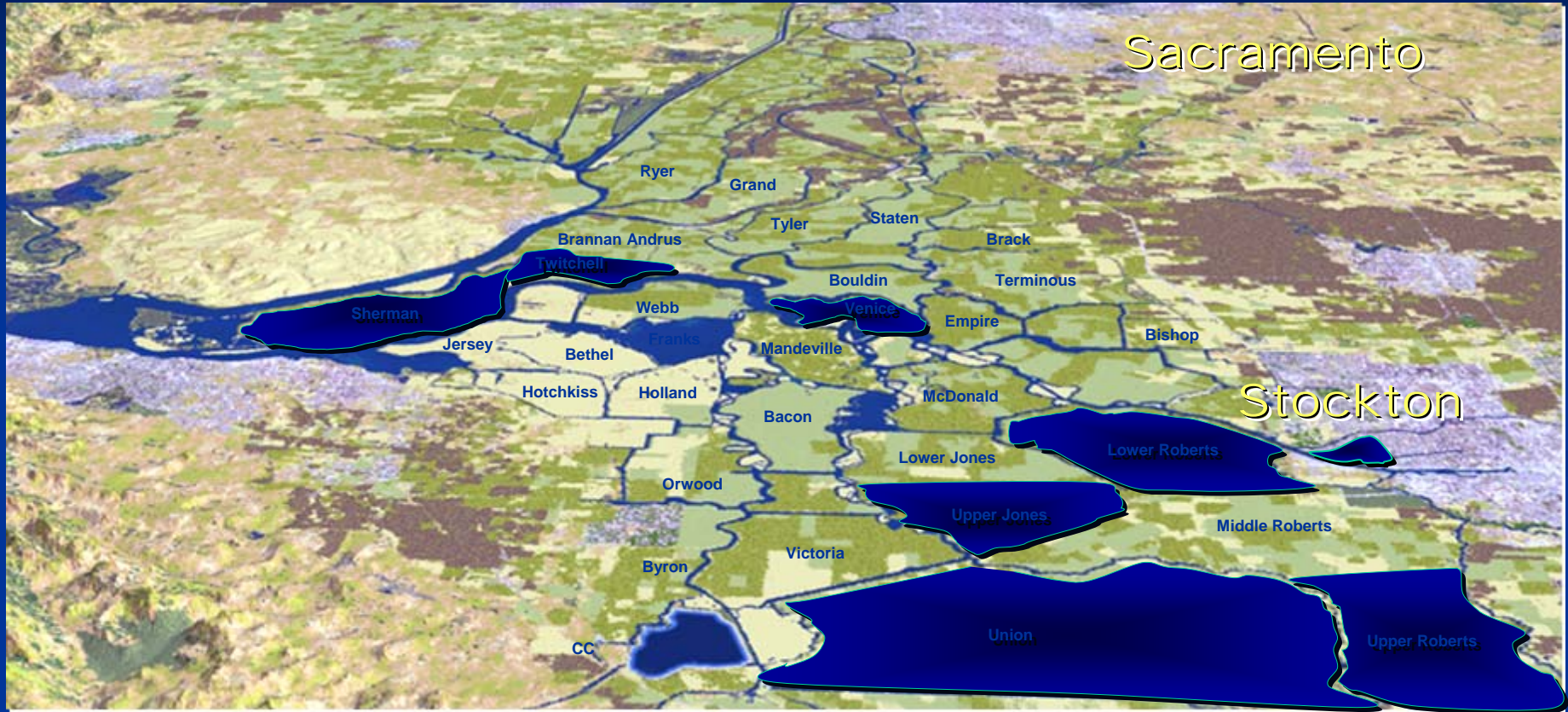
# Year 1904



Indicates years with 7 or more island failures



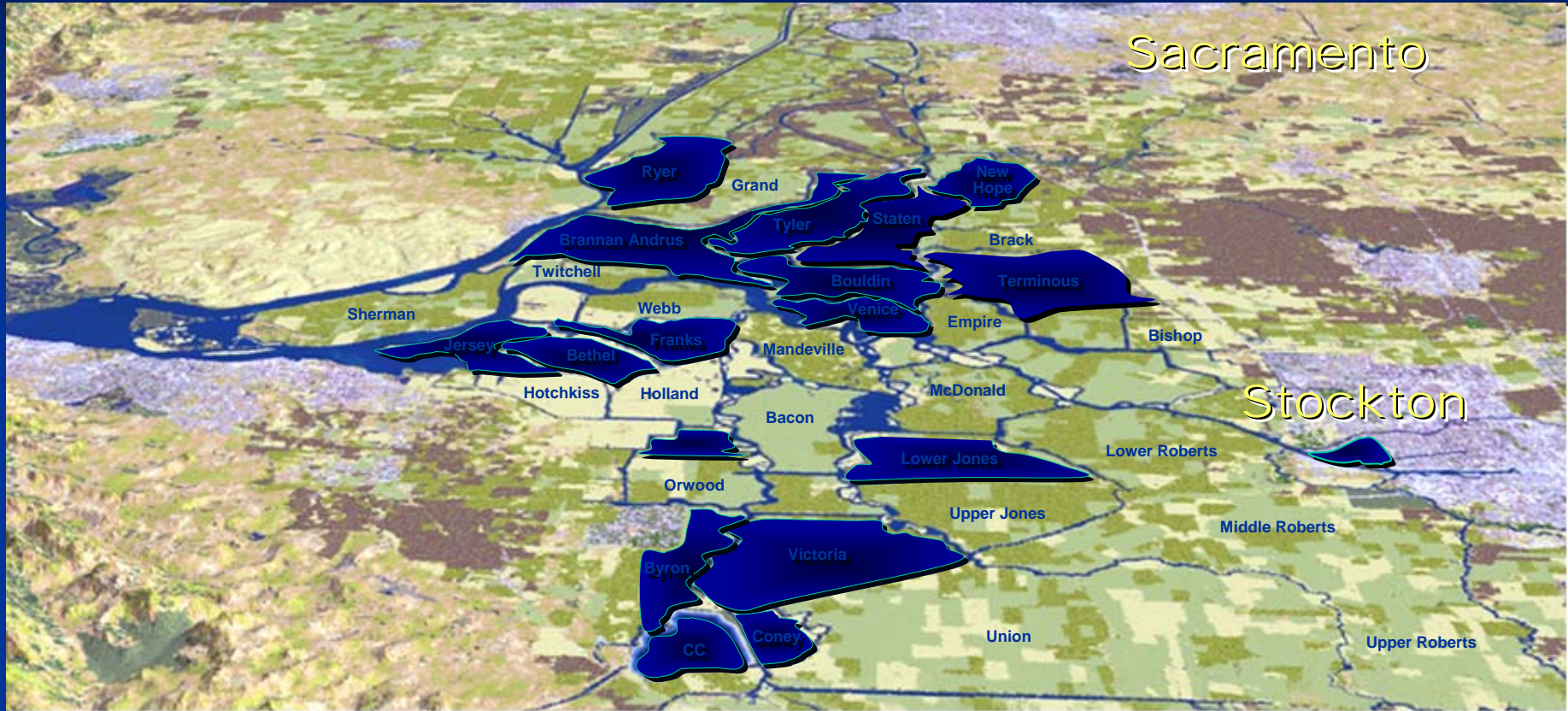
# Year 1906



Indicates years with 7 or more island failures



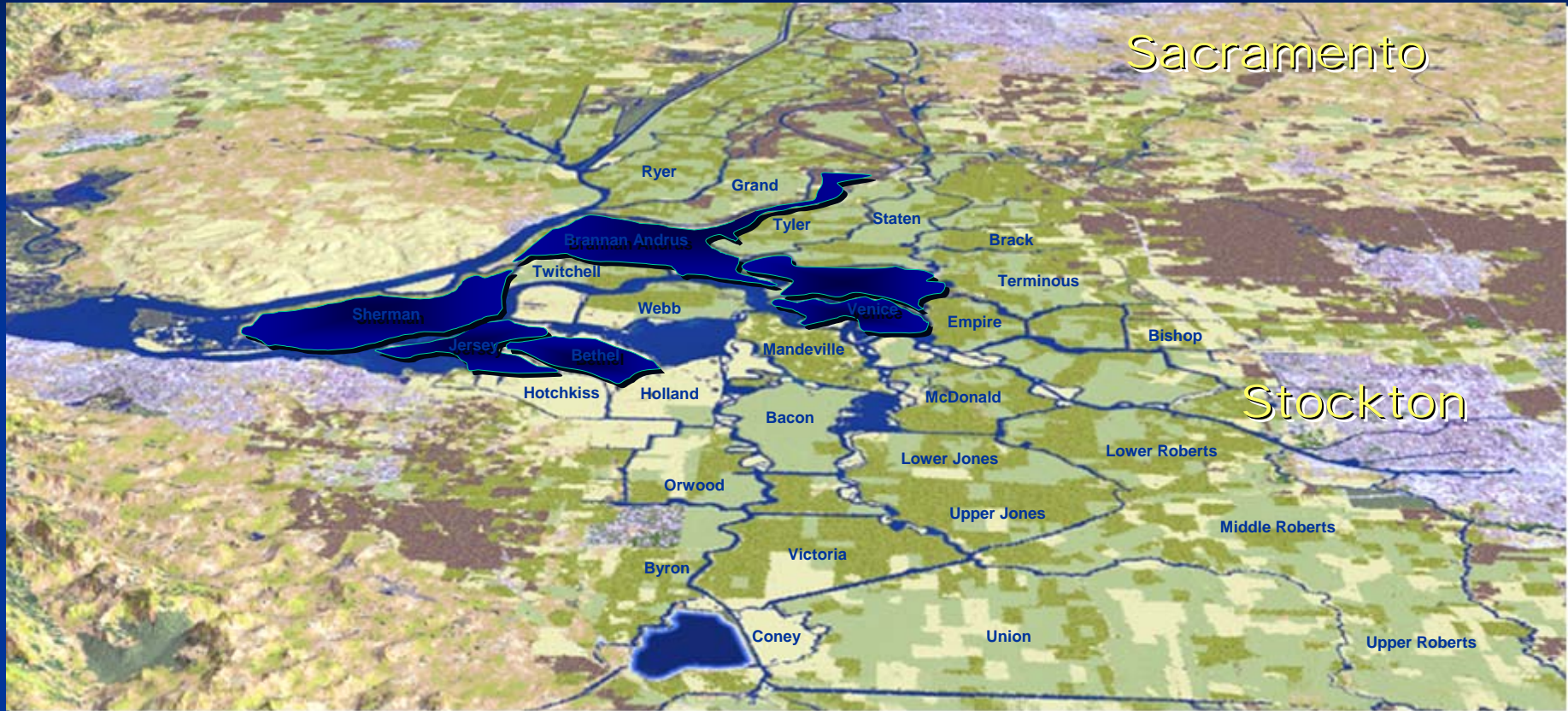
# Year 1907



Indicates years with 7 or more island failures



# Year 1909



Indicates years with 7 or more island failures



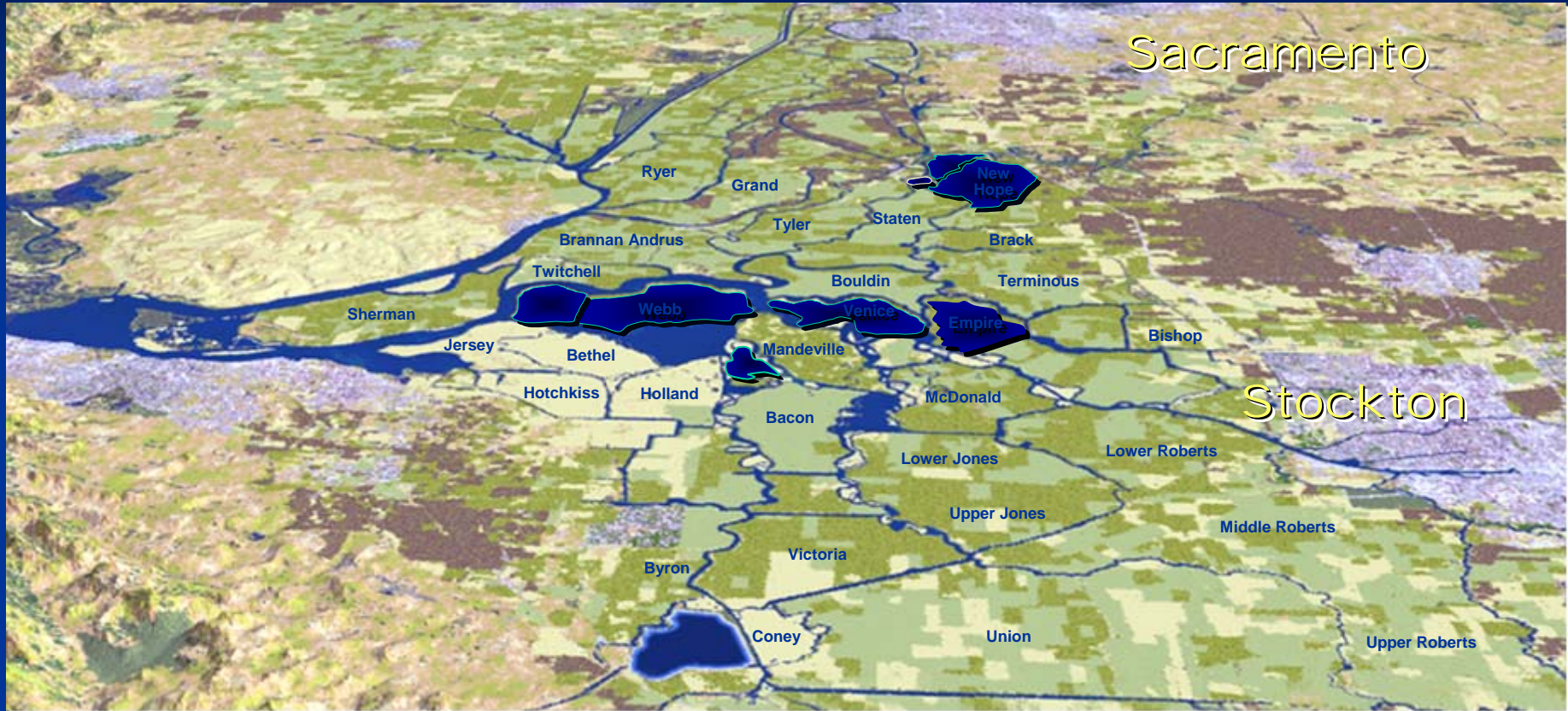
# Year 1938



Indicates years with 7 or more island failures



# Year 1950



Indicates years with 7 or more island failures



# Year 1955



Indicates years with 7 or more island failures



# Year 1980



Indicates years with 7 or more island failures



# Year 1983



Indicates years with 7 or more island failures



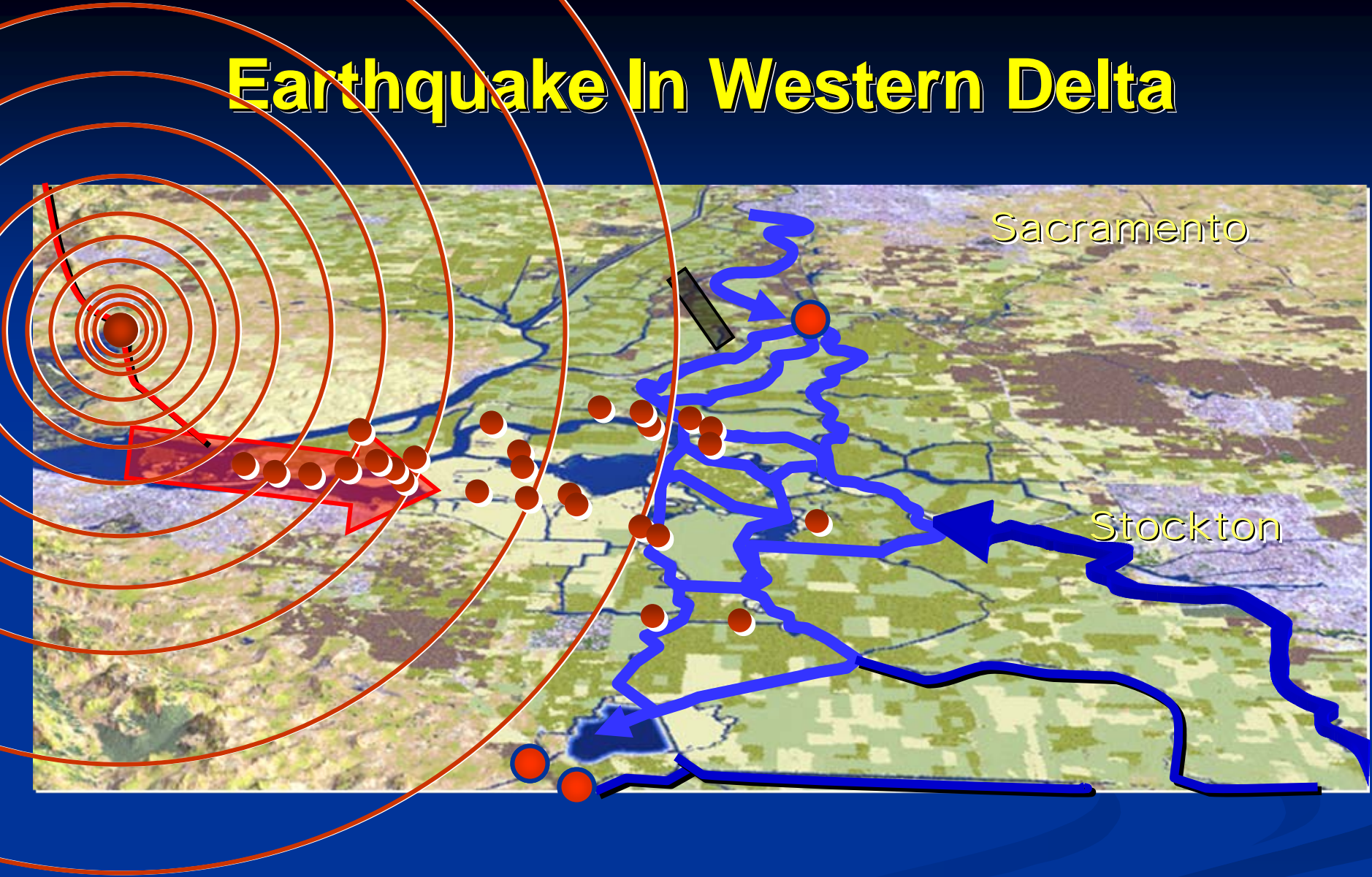
# Year 1986



Indicates years with 7 or more island failures

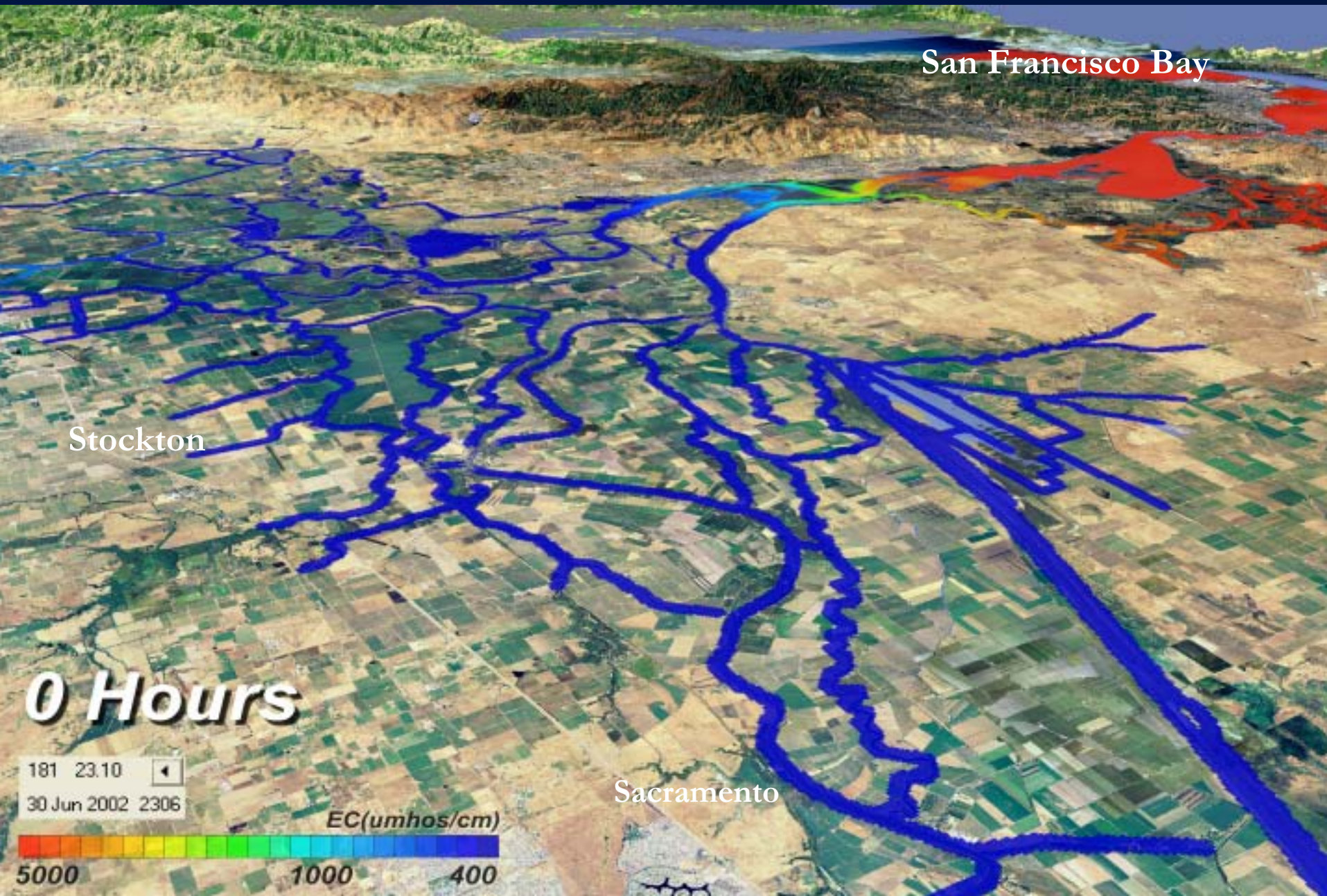


# Earthquake In Western Delta



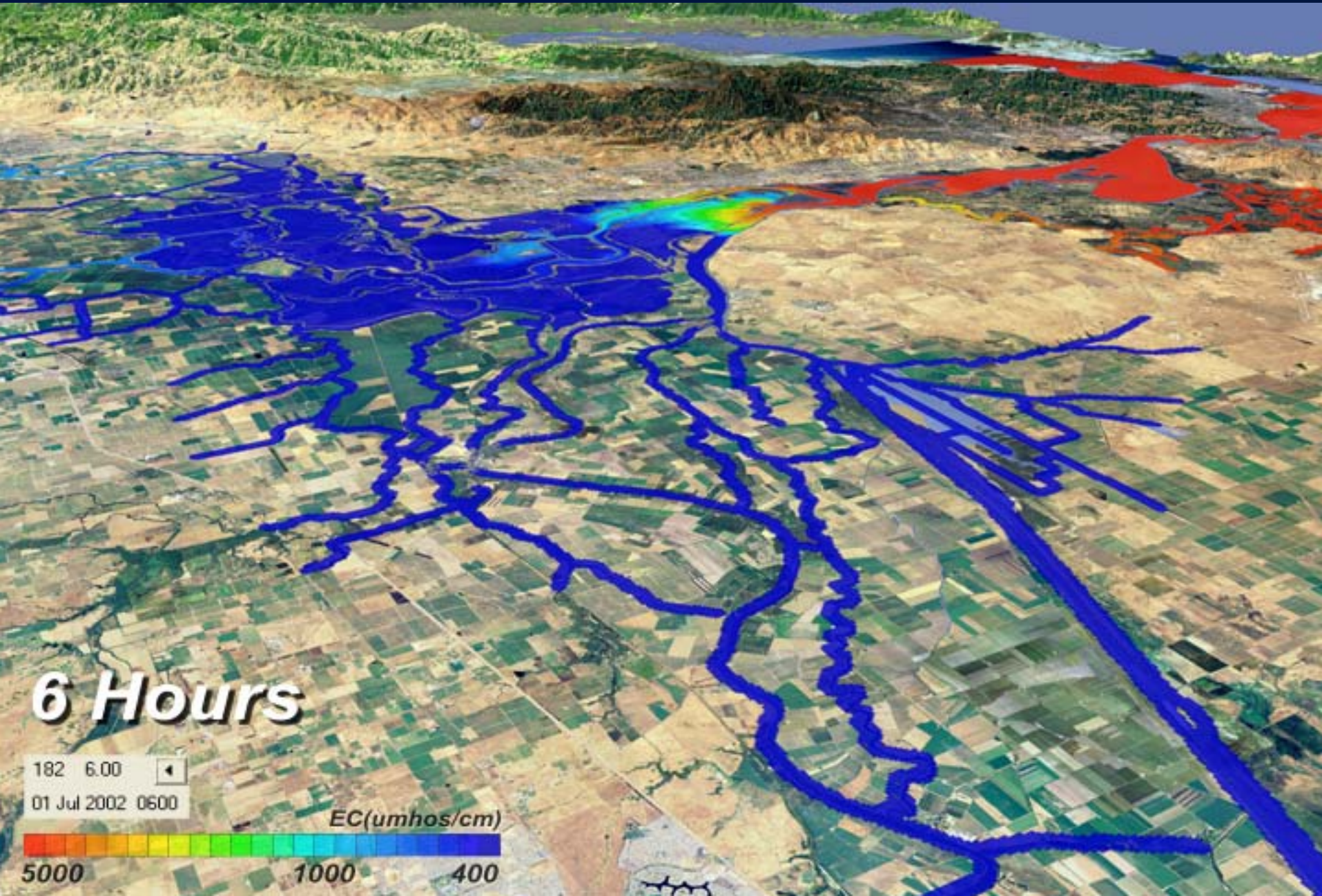


# 6.5 Richter Earthquake and 20-Island Failure



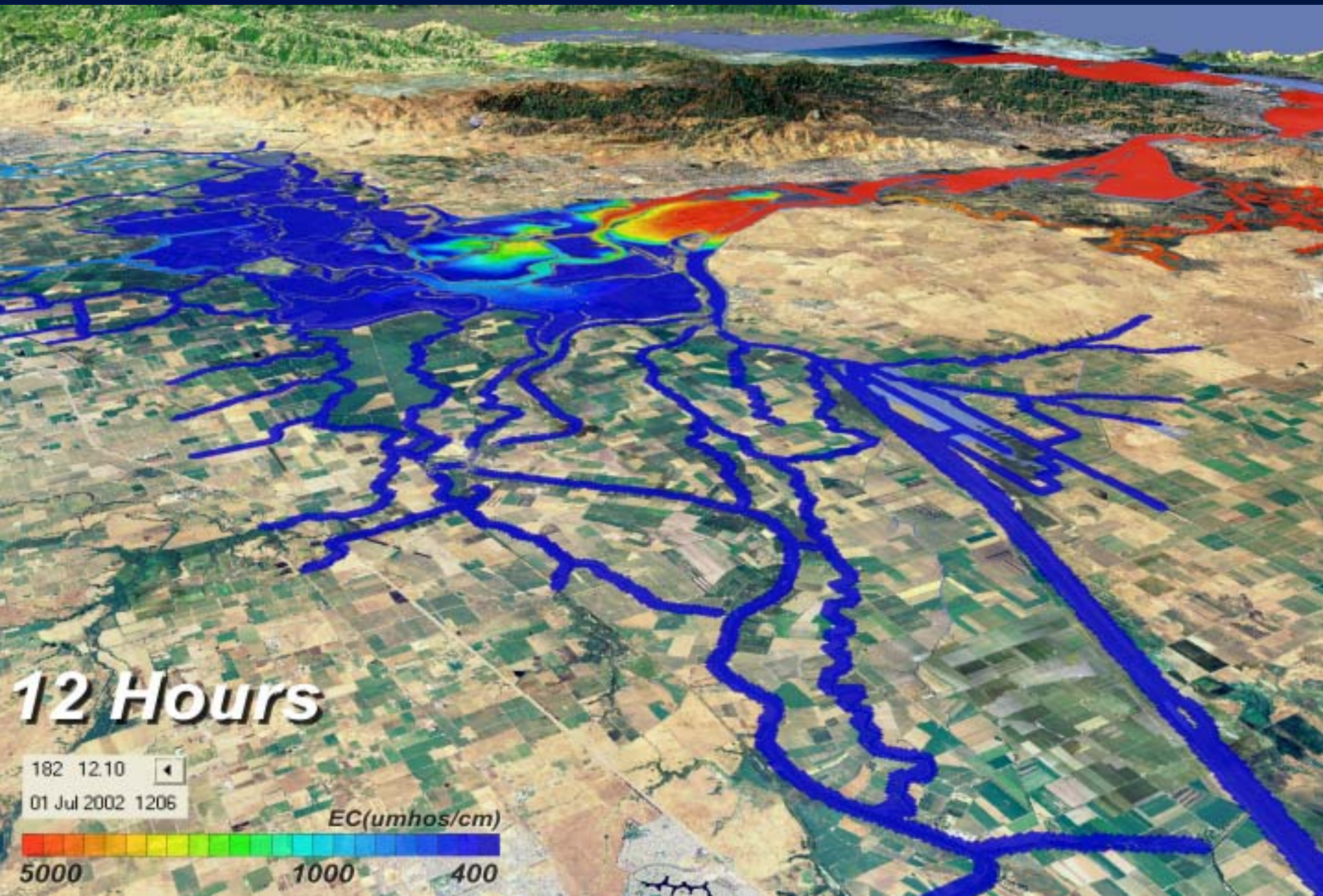


# 6.5 Richter Earthquake and 20-Island Failure



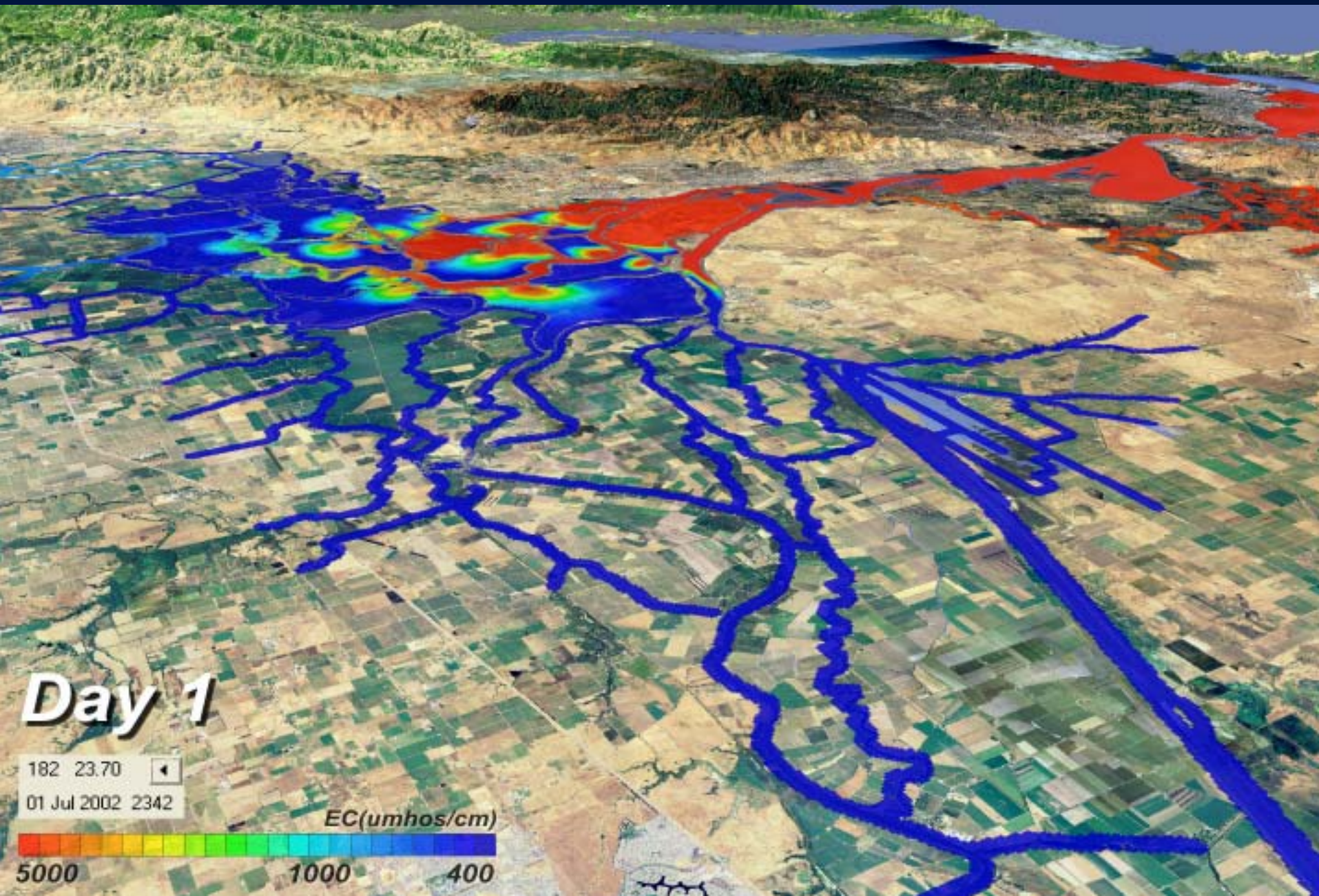


# 6.5 Richter Earthquake and 20-Island Failure



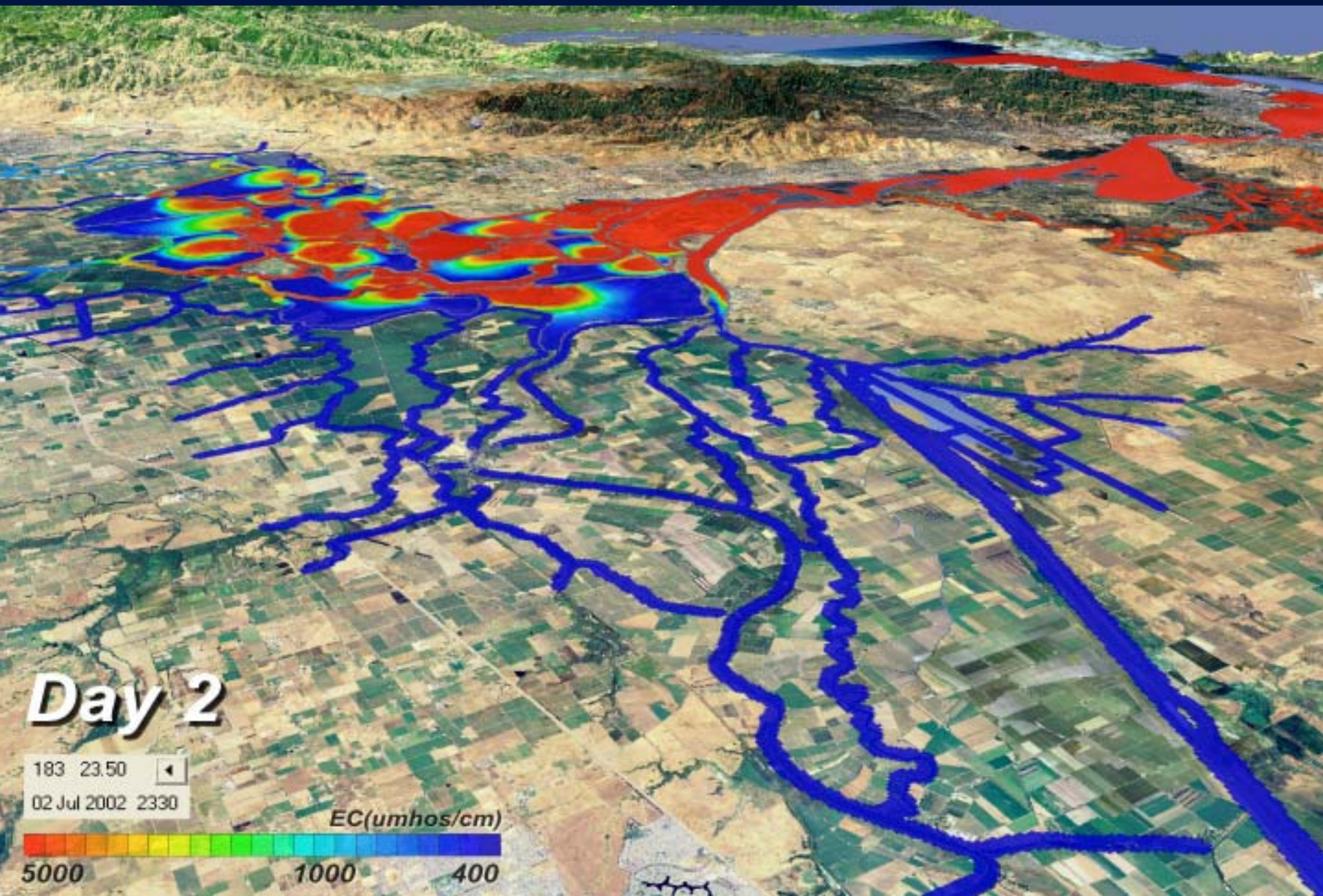


# 6.5 Richter Earthquake and 20-Island Failure



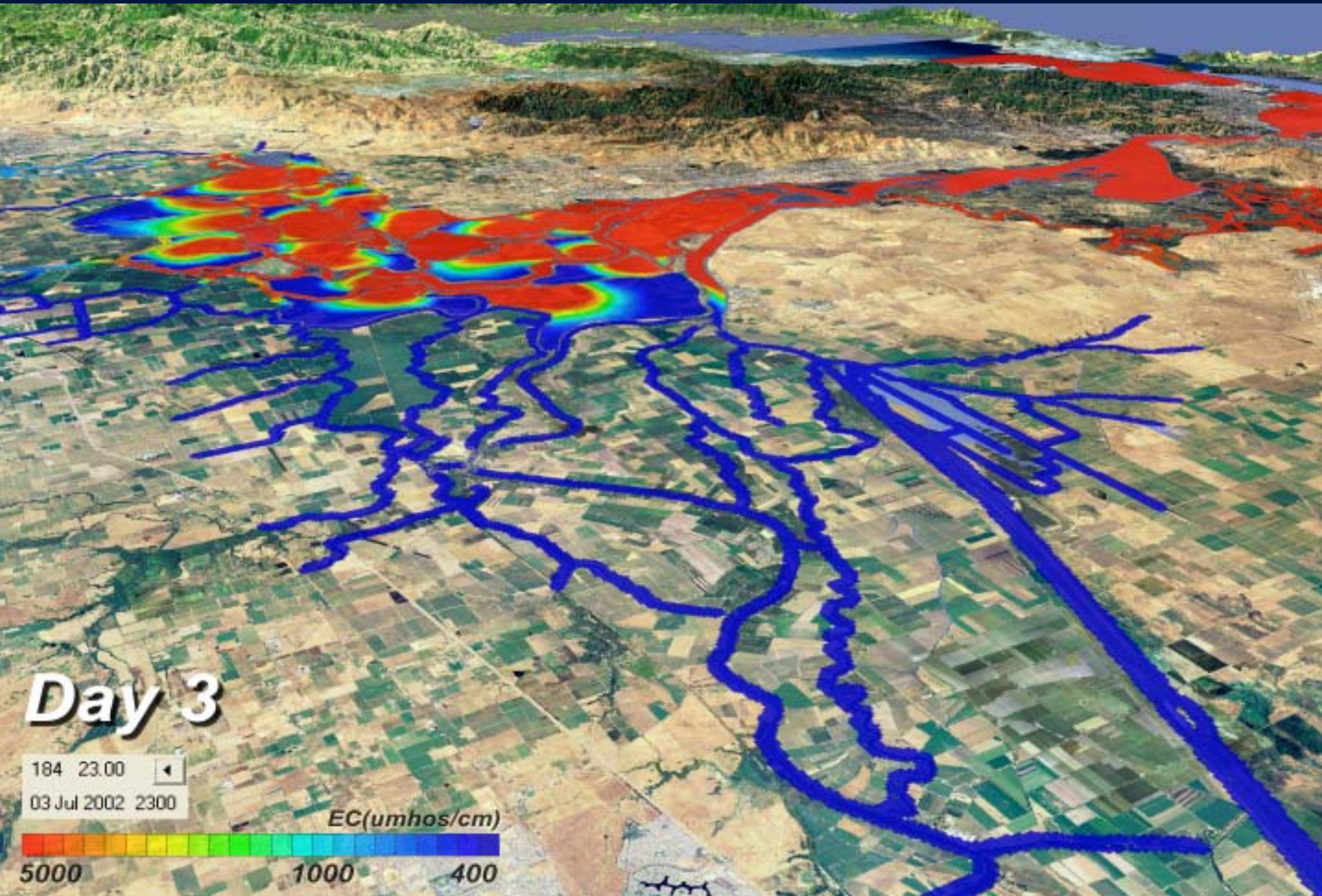


# 6.5 Richter Earthquake and 20-Island Failure



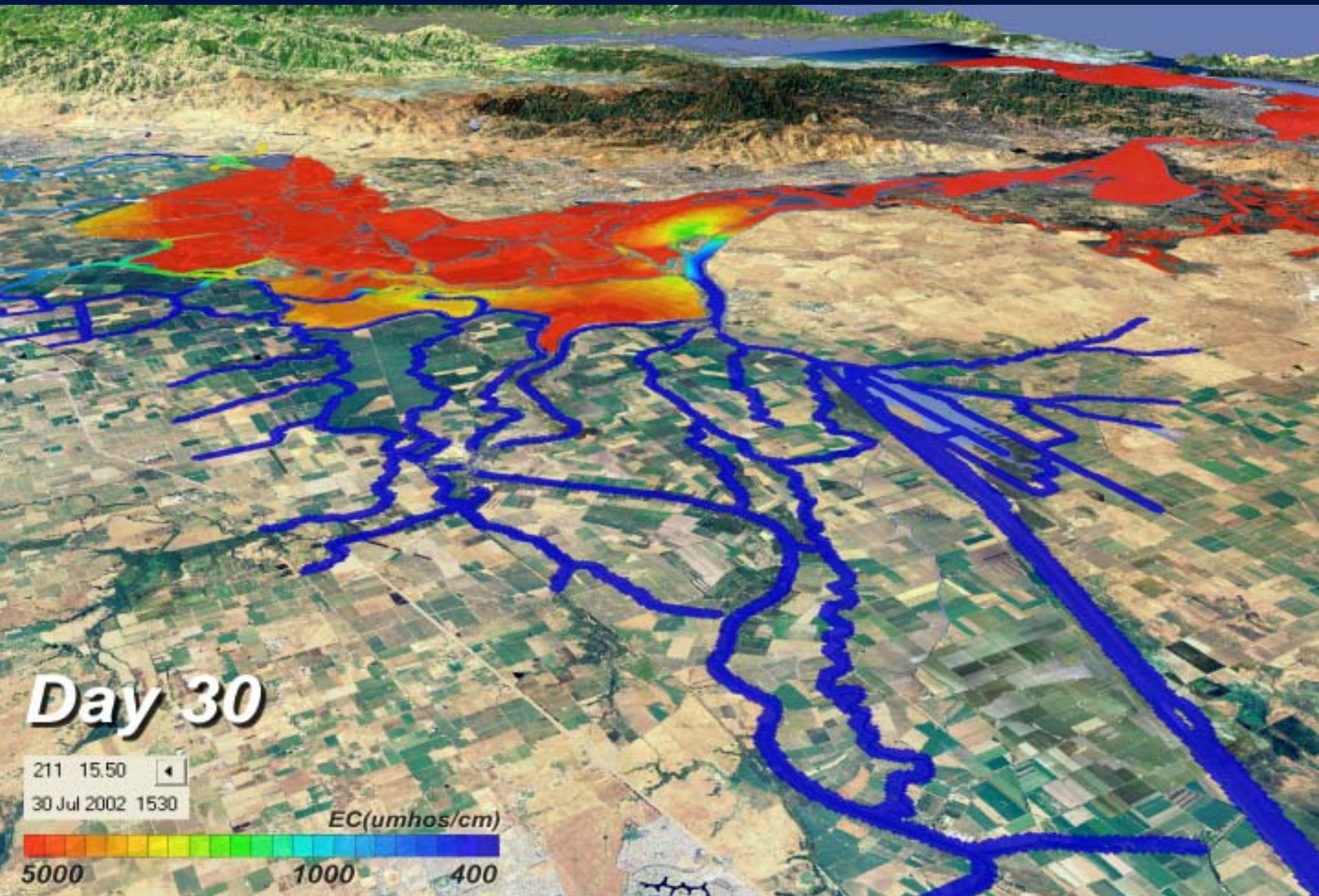


# 6.5 Richter Earthquake and 20-Island Failure





# 6.5 Richter Earthquake and 20-Island Failure





# Delta Challenges

- Ecosystem Collapse
- Delta Levee Risks
- Water Project Operations – Record Exports
- Water Quality
  - Contaminants & Ag/Urban Runoff
  - Salinity
- Invasive Species
- Failure of Governance & Accountability
- Urbanization & Land Use



# Multiple Delta Efforts

- Delta Vision
- Pelagic Organism Decline (POD)
- Delta Risk Management Strategy
- Bay-Delta Conservation Plan
- CALFED Bay-Delta Program
  - Independent Science Program
  - Ecosystem Restoration Program



# Bond Funding: Flood & Delta

*Assembly Committee on  
Water, Parks & Wildlife*